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10/664,850	09/22/2003	Yossi Reuven	P-5691-US	4322
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PEARL COHEN ZEDEK LATZER, LLP 1500 BROADWAY, 12TH FLOOR NEW YORK, NY 10036			EXAMINER TORRES, JUAN A	
			ART UNIT	PAPER NUMBER
			2611	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/664,850	Applicant(s) REUVEN, YOSSEI	
	Examiner Juan A. Torres	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3,6-8,11,12,14,18,20,23 and 24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,6-8,11,12,14,18,20,23 and 24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 May 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Drawings***

The modifications to the drawings were received on 05/02/2007. These modifications are accepted by the Examiner.

In view of the amendment filed on 05/02/2007, the Examiner withdraws drawings objections of the previous Office action.

### ***Specification***

The modifications to the specification were received on 05/02/2007. These modifications are accepted by the Examiner.

In view of the amendment filed on 05/02/2007, the Examiner withdraws Specification objections of the previous Office action.

### ***Claim Warnings***

The modifications to the claims were received on 05/02/2007. These modifications are accepted by the Examiner.

In view of the amendment filed on 05/02/2007, the Examiner withdraws claims warnings to claim 17 of the previous Office action.

### ***Response to Arguments***

#### **Regarding claims 1, 3, 6-8 and 11:**

Applicant's arguments with respect to claims 1, 3, 6-8 and 11 have been considered but are moot in view of the new ground(s) of rejection.

#### **Regarding claim 12:**

Applicant's arguments filed 05/02/2007 have been fully considered but they are not persuasive.

The Applicant contends, "However, neither Brown nor Kawano, either separately or together disclose Claim 12 recites an apparatus having a first phase locked loop to set a first frequency of a first output signal of a first voltage controlled oscillator using a fractional N synthesizer to derive said first frequency from an input frequency; a second phase locked loop to receive the output signal of the first voltage controlled oscillator and to control a second voltage controlled oscillator to provide a second output signal having a second frequency derived from the first frequency using an integer divider synthesizer; and a transceiver having first and second mixers operably coupled to the first and second voltage controlled oscillators respectively and able to transmit and receive signals by at least two dipole antennas".

The Examiner disagrees, and asserts, that Brown discloses a first phase locked loop to set a frequency of a first output signal of a first voltage controlled oscillator using a fractional N synthesizer to derive the first frequency from an input frequency (figure 5 column 7 lines 17-26); a second phase locked loop to receive the output signal of the first voltage controlled oscillator and to control a second voltage controlled oscillator to provide a second output signal having a second frequency derived from the first frequency using an integer divider synthesizer. Brown doesn't disclose a transceiver having first and second mixers operably coupled to a first and second voltage controlled oscillators respectively and able to transmit and receive signals by at least two dipole antennas. Kawano discloses a transceiver having first and second mixers operably

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coupled to a first and second voltage controlled oscillators respectively and able to transmit and receive signals by at least two antennas (figure 1 blocks 13 and 42, column 7 lines 32-38). Brown and Kawano are analogous art because they are from the same field of endeavor of phase locked loops. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to incorporate in the phase locked loops disclosed by Brown the transceiver disclosed by Kawano. The suggestion/motivation for doing so would have been to filter phase noise in a portable telephone terminal (Kawano column 7 lines 32-38). Brown and Kawano don't disclose that the antennas are dipole antenna. McLean discloses the use of two dipole antennas. Kawano and McLean are analogous art because they are from the same field of endeavor of wireless communications. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to incorporate in the system disclosed by Kawano the dipole antenna disclosed by McLean. The suggestion/motivation for doing so would have been to reduce the cost of the system (McLean abstract).

For these reasons, and the reason stated on the previous Office action, the rejection of claim 12 is maintained.

Regarding claim 14:

Applicant's arguments filed 05/02/2007 have been fully considered but they are not persuasive.

The Applicant contends, "Likewise, claim 14, which depends from claim 12 is allowable. Moreover, claim 14, which recites that the frequency of the second output

signal is substantially similar to the frequency of the first output signal, is neither anticipated nor obvious in light of Brown or Kawano, either alone or taken together”.

The Examiner disagrees, and asserts, that as indicated in the previous Office action Brown, Kawano and McLean disclose claim 12, Brown also discloses that the frequency of the second output signal is substantially similar to the frequency of the first output signal (figure 5 block 516 column 4 lines 23-50 and column 7 lines 17-26 and 41-58)

For these reasons, and the reason stated en the previous Office action, the rejection of claim 14 is maintained.

Regarding claims 18, 20, 23 and 24:

Applicant's arguments with respect to claims 1, 3, 6-8 and 11 have been considered but are moot in view of the new ground(s) of rejection.

**Examiner NOTE 1:** The headers of the Amendment - After Non-Final Rejection filed on 05/02/2007, seems to below to a different Application, in particular to “APPLICANT(S): GINZBURG, Boris et al. SERIAL NO.: 10/705,983 FILED: November 13, 2003”, this information has not been consider by the Examiner.

**Examiner NOTE 2:** Claim 18 includes a new limitation that has not been underlined by the Applicants (Non-Compliant Amendment). The new limitation is that the antennas are “dipole” antennas. This force the Examiner to new ground of rejection in the same line that the rejection of claim 12.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 6-8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown (US 6333678 B1) in view of Kawano (US 6181923 B1).

Regarding claim 1, Brown discloses a fractional N synthesizer to provide a first frequency of a first output signal (figure 5 blocks 212, 102, 104, 206, 208, and 210 column 7 lines 17-26); and an integer divider synthesizer to receive the first output signal of the fractional N synthesizer to provide a second output signal having a second frequency derived from the first frequency of the first output signal (figure 5 block 516 column 7 lines 17-26). Brown doesn't disclose that the first and second output signals are provided respectively to first and second mixers. Kawano discloses the first and second output signals are provided respectively to first and second mixers (figure 1, blocks 13 and 42 column 7 lines 32-38). Brown and Kawano are analogous art because they are from the same field of endeavor of phase locked loops. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to incorporate in the phase locked loops disclosed by Brown the transceiver disclosed by Kawano. The suggestion/motivation for doing so would have been to use one synthesizer for the transmitted and received signal (Kawano column 8 lines 50-62).

Regarding claim 3, Brown and Kawano disclose claim 1, Brown also discloses that the second frequency is substantially similar to the first frequency (figure 5 block 516 column 4 lines 23-50 and column 7 lines 17-26 and 41-58).

Regarding claim 6, Brown and Kawano disclose claim 1, Brown also discloses an oscillator to provide a fundamental frequency to the fractional N synthesizer (figure 5 reference clock).

Regarding claim 7, Brown and Kawano disclose claim 6, Brown also discloses that the oscillator includes a crystal oscillator (column 2 lines 22-30; and column 3 lines 51-66).

Regarding claim 8, Brown discloses generating by an integer divider synthesizer an output signal having a frequency derived from an input signal having a desired frequency generated by a fractional synthesizer (figure 5 column 7 lines 17-26). Brown doesn't disclose providing the output signal of each synthesizer to a first and second mixer respectively. Kawano discloses providing the output signal of each synthesizer to a first and second mixer respectively (figure 1, blocks 13 and 42 column 7 lines 32-38). Brown and Kawano are analogous art because they are from the same field of endeavor of phase locked loops. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to incorporate in the phase locked loops disclosed by Brown the transceiver disclosed by Kawano. The suggestion/motivation for doing so would have been to use one synthesizer for the transmitted and received signal (Kawano column 8 lines 50-62).



Regarding claim 11, Brown and Kawano disclose claim 8, Brown also discloses generating the input signal and the output signal from a signal having a fundamental frequency (figure 5 reference clock).

Claims 12, 14, 18, 20, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown (US 6333678 B1) in view of Kawano (US 6181923 B1), and further in view of McLean (US 6657601 B2) (with Plotnik (US 6873608 B1) figure 1 for inherency of a portable telephone terminal using an internal antenna, also published as WO99/08456).

Regarding claim 12, Brown discloses a first phase locked loop to set a frequency of a first output signal of a first voltage controlled oscillator using a fractional N synthesizer to derive the first frequency from an input frequency (figure 5 column 7 lines 17-26); a second phase locked loop to receive the output signal of the first voltage controlled oscillator and to control a second voltage controlled oscillator to provide a second output signal having a second frequency derived from the first frequency using an integer divider synthesizer (figure 5 block 516 column 7 lines 17-26). Brown doesn't disclose a transceiver having first and second mixers operably coupled to a first and second voltage controlled oscillators respectively and able to transmit and receive signals by at least two dipole antennas. Kawano discloses a transceiver having first and second mixers operably coupled to a first and second voltage controlled oscillators respectively and able to transmit and receive signals by at least two antennas (figure 1 blocks 13 and 42, column 7 lines 32-38). Brown and Kawano are analogous art because they are from the same field of endeavor of phase locked loops. At the time of

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the invention, it would have been obvious to a person of ordinary skill in the art to incorporate in the phase locked loops disclosed by Brown the transceiver disclosed by Kawano. The suggestion/motivation for doing so would have been to use one synthesizer for the transmitted and received signal (Kawano column 8 lines 50-62). Brown and Kawano don't disclose that the antennas are dipole antenna. McLean discloses the use of two dipole antennas. Kawano and McLean are analogous art because they are from the same field of endeavor of wireless communications. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to incorporate in the system disclosed by Kawano the dipole antenna disclosed by McLean. The suggestion/motivation for doing so would have been to reduce the cost of the system (McLean abstract).

Regarding claim 14, Brown, Kawano and McLean disclose claim 12, Brown also discloses that the frequency of the second output signal is substantially similar to the frequency of the first output signal (figure 5 block 516 column 4 lines 23-50 and column 7 lines 17-26 and 41-58).

Regarding claim 18, Brown discloses a first phase locked loop to set a frequency of a first output signal of a first voltage controlled oscillator using a fractional N synthesizer to derive the first frequency from an input frequency (figure 5 blocks 212, 102, 104, 206, 208, and 210 column 7 lines 17-26); and a second phase locked loop to receive the output signal of the first voltage controlled oscillator and to control a second voltage controlled oscillator to provide a second output signal having a second frequency derived from the first frequency using an integer divider synthesizer (figure 5

block 516 column 7 lines 17-26). Brown doesn't disclose a mobile station having a dual output synthesizer, which includes a and a transceiver having first and second mixers operably coupled to the first and second voltage controlled oscillators respectively and able to transmit and receive signals by at least two dipole antennas. Kawano discloses a mobile station having a dual output synthesizer, which includes a and a transceiver having first and second mixers operably coupled to the first and second voltage controlled oscillators respectively and able to transmit and receive signals by at least two antennas (figure 1, column 7 lines 32-38). Brown and Kawano are analogous art because they are from the same field of endeavor of phase locked loops. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to incorporate in the phase locked loops disclosed by Brown the transceiver disclosed by Kawano. The suggestion/motivation for doing so would have been to use one synthesizer for the transmitted and received signal (Kawano column 8 lines 50-62). Brown and Kawano don't disclose that the antennas are dipole antenna. McLean discloses the use of two dipole antennas. Kawano and McLean are analogous art because they are from the same field of endeavor of wireless communications. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to incorporate in the system disclosed by Kawano the dipole antenna disclosed by McLean. The suggestion/motivation for doing so would have been to reduce the cost of the system (McLean abstract).

Regarding claim 20, Brown, Kawano and McLean disclose claim 18, Brown also discloses that the frequency of the second output signal is substantially similar to the

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frequency of the first output signal (figure 5 block 516 column 4 lines 23-50 and column 7 lines 17-26 and 41-58).

Regarding claim 23, Brown, Kawano and McLean disclose claim 18, Kawano also discloses a base station of a cellular communication system (figure 1, column 8 lines 35-62). Brown and Kawano are analogous art because they are from the same field of endeavor of phase locked loops. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to incorporate in the phase locked loops disclosed by Brown the transceiver disclosed by Kawano. The suggestion/motivation for doing so would have been to use one synthesizer for the transmitted and received signal (Kawano column 8 lines 50-62).

Regarding claim 24, Brown, Kawano and McLean disclose claim 18, Kawano also discloses that the antenna is used in a portable telephone terminal that inherently will use an internal antenna (figure 1, column 8 lines 35-49. See Plotnik (US 6873608 B1) figure 1 for inherency of a portable telephone terminal using an internal antenna). Brown and Kawano are analogous art because they are from the same field of endeavor of phase locked loops. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to incorporate in the phase locked loops disclosed by Brown the transceiver disclosed by Kawano. The suggestion/motivation for doing so would have been to use one synthesizer for the transmitted and received signal (Kawano column 8 lines 50-62).

**Conclusion**

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juan A. Torres whose telephone number is 571-272-3119. The examiner can normally be reached on 8-6 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Juan Alberto Torres  
05-14-2007

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